

## 8. REGULATIONS AND ADVISORIES

The international, national, and state regulations and guidelines regarding naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene in air, water, and other media are summarized in Table 8-1.

The EPA has calculated an oral exposure RfD of  $2 \times 10^{-2}$  mg/kg/day for naphthalene based on a NOAEL of 100 mg/kg/day for the absence of decreased mean terminal body weight in male rats exposed by gavage for 13 weeks (IRIS 2003; NTP 1980b). An inhalation RfC of  $3 \times 10^{-3}$  mg/m<sup>3</sup> for naphthalene was derived based on a LOAEL of 10 ppm ( $\text{LOAEL}_{[\text{human equivalent concentration}]} = 9.3 \text{ mg/m}^3$ ) for nasal lesions in mice exposed by inhalation for 2 years (IRIS 2003; NTP 1992a).

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**Table 8-1. Regulations and Guidelines Applicable to Naphthalene, 1-Methylnaphthalene, and 2-Methylnaphthalene**

Agency	Description	Information	Reference
<u>INTERNATIONAL</u>			
Guidelines:			
IARC	Carcinogenicity classification	Group 2B <sup>a</sup>	IARC 2002a
WHO	Drinking water guideline	No data	
<u>NATIONAL</u>			
Regulations and Guidelines:			
a. Air:			
ACGIH	TLV (8-hour TWA) Naphthalene <sup>b</sup> STEL	10 ppm 15 ppm	ACGIH 2003
EPA	Hazardous air pollutant	Naphthalene	EPA 2003g 40 CFR 63, Subpart CC, Appendix, Table 1
	National emission standards for hazardous air pollutants	No (zero) emissions are allowed	EPA 2003h 40 CFR 61.134
	Naphthalene processing, final coolers, and final-cooler cooling towers at coke by-product recovery plants		
NIOSH	REL (10-hour TWA) Naphthalene STEL IDLH	10 ppm 15 ppm 250 ppm	NIOSH 2003
OSHA	PEL (8-hour TWA) for general industry Naphthalene	10 ppm	OSHA 2003a 29 CFR 1910.1000, Table Z-1
	PEL (8-hour TWA) for construction industry Naphthalene	10 ppm	OSHA 2003c 29 CFR 1926.55, Appendix A
	PEL (8-hour TWA) for shipyard industry Naphthalene	10 ppm	OSHA 2003b 29 CFR 1915.1000
USC	Hazardous air pollutant	Naphthalene	USC 2003

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Agency	Description	Information	Reference
<u>NATIONAL</u> (cont.)			
b. Water			
EPA	Drinking water health advisories		EPA 2002
	1-day (10-kg child)	0.5 mg/L	
	10-day (10-kg child)	0.5 mg/L	
	DWEL <sup>f</sup>	0.7 mg/L	
	Life-time <sup>g</sup>	0.1 mg/L	
	Effluent guidelines and standards; toxic pollutants pursuant to Section 307(a)(1) of the Clean Water Act	Naphthalene	EPA 2003c 40 CFR 401.15
EPA	Hazardous substance designated in accordance with Section 311 (b)(2)(A) of the Clean Water Act	Naphthalene	EPA 2003p 40 CFR 116.4
	Pollutants of initial focus in the Great Lakes Water Quality Initiative	Naphthalene	EPA 2003q 40 CFR 132, Table 6
	Reportable quantities of hazardous substances (naphthalene) designated pursuant to Section 311 of the Clean Water Act	100 pounds	EPA 2003j 40 CFR 117.3
c. Food	No data		
d. Other			
ACGIH	Carcinogenicity classification	A4 <sup>h</sup>	
EPA	Carcinogenicity classification	Group C <sup>i</sup>	IRIS 2003
	RfD (oral)	2.0x10 <sup>-2</sup> mg/kg/day	IRIS 2003
	RfC (inhalation)	3.0x10 <sup>-3</sup> mg/m <sup>3</sup>	IRIS 2003
	Community right-to-know; release reporting; effective date of reporting	01/01/87	EPA 2003m 40 CFR 372.65
	Criteria for municipal solid waste landfills; hazardous constituent	Naphthalene 2-Methylnaphthalene	EPA 2003a 40 CFR 258, Appendix II
	Identification and listing of hazardous waste; hazardous waste number		EPA 2003d 40 CFR 261, Appendix VIII
	Naphthalene	U165	
	Land disposal restrictions; universal treatment standards for naphthalene		EPA 2003e 40 CFR 268.48
	Waste water standard	0.059 mg/L	
	Non-waste water standard	5.6 mg/L TCLP	

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<u>NATIONAL</u> (cont.)				
EPA	Landfills point source effluent limitations attainable by the application of the best practicable control technology currently available			EPA 2003f 40 CFR 445.11
	Maximum daily	0.059 mg/L		
	Maximum monthly average	0.022 mg/L		
	Reportable quantity of hazardous substance in accordance with Section 311 (b)(2) and 307(a) of the Clean Water Act, Section 112 of RCRA, and Section 112 of the Clean Air Act for naphthalene	100 pounds		EPA 2003b 40 CFR 302.4
	Standards for owners and operators of hazardous waste TSD facilities; groundwater monitoring	Suggested Method	PQL	EPA 2003k 40 CFR 264, Appendix IX
	Naphthalene	8100	200 µg/L	
		8270	10 µg/L	
	2-Methylnaphthalene	8270	10 µg/L	
	Standards for owners and operators of hazardous waste TSD facilities; health-based limits for exclusion of waste-derived residues; residue concentration limit	10 mg/kg		EPA 2003l 40 CFR 266, Appendix VII
	TSCA chemical information rules; health and safety data reporting for naphthalene			EPA 2003n 40 CFR 712.30
	Effective date	08/04/95		
	Reporting date <sup>j</sup>	10/03/95		
	TSCA health and safety data reporting for naphthalene <sup>k</sup>			EPA 2003o 40 CFR 716.120
	Effective date	08/04/95		
	Sunset date	10/03/95		
<u>STATE</u>				
a. Air	No data			
b. Water				
Maine	Drinking water guideline	25 µg/L		HSDB 2003
Minnesota	Drinking water guideline	300 µg/L		HSDB 2003
New Jersey	Drinking water standard	300 µg/L		HSDB 2003
Washington	Drinking water guideline	14 µg/L		HSDB 2003
Wisconsin	Drinking water guideline	40 µg/L		HSDB 2003
Florida	Drinking water guideline	6.8 µg/L		HSDB 2003

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Agency	Description	Information	Reference
<u>STATE (cont.)</u>			
c. Food	No data		
d. Other	No data		

<sup>a</sup>Group 2B: possibly carcinogenic to humans

<sup>b</sup>Skin notation: refers to the potential significant contribution to the overall exposure by the cutaneous route, including mucous membranes and the eyes, either by contact with vapors or, of probable greater significance, by direct skin contact with the substance.

<sup>c</sup>Class D: refers to the retention (clearance half-times of <10 days) for all compounds except those given for W.

<sup>d</sup>The ALIs and DACs for inhalation are given for an aerosol with an activity median aerodynamic diameter (AMAD) of 1 µm and for class D and W of radioactive material, which refers to their retention (clearance half-times of <10 days and 10–100 days, respectively) in the pulmonary region of the lung.

<sup>e</sup>Class W: refers to the retention (clearance half-times of 10–100 days) for oxides, hydroxides, and carbides.

<sup>f</sup>DWEL: a lifetime exposure concentration protection of adverse, non-cancer health effects, that assumes all of the exposure to a contaminant is from drinking water.

<sup>g</sup>Life-time: the concentration of a chemical in drinking water that is not expected to cause any adverse noncarcinogenic effects for a lifetime of exposure. The Lifetime HA is based on exposure of a 70-kg adult consuming 2 L water/day.

<sup>h</sup>A4: not classifiable as a human carcinogen

<sup>i</sup>Group C: a possible human carcinogen

<sup>j</sup>Reporting date: manufacturers and importers of naphthalene must submit a Preliminary Assessment Information Manufacturer's Report for each site at which they manufacture or import naphthalene by the reporting date.

<sup>k</sup>TSCATS health and safety data reporting: naphthalene is subject to all provisions of part 716. Manufacturers, importers, and processors of naphthalene are subject to the reporting requirements of subpart A.

ACGIH = American Conference of Governmental Industrial Hygienists; CFR = Code of Federal Regulations; DWEL = drinking water equivalent level; EPA = Environmental Protection Agency; FDA = Food and Drug Administration; HSDB = Hazardous Substances Data Bank; IARC = International Agency for Research on Cancer; IDLH = immediately dangerous to life or health; IRIS = Integrated Risk Information System; LLI = lower large intestine; NIOSH = National Institute for Occupational Safety and Health; OSHA = Occupational Safety and Health Administration; PEL = permissible exposure limit; PQL = practical quantitation level; RCRA = Resource Conservation and Recovery Act; REL = recommended exposure limit; RfC = reference concentration; RfD = reference dose; STEL = short-term exposure limit; TCLP = toxicity characteristic leachate procedure; TLV = threshold limit values; TSCA = Toxic Substances Control Act; TSD = treatment, storage, and disposal; TWA = time-weighted average; USC = United States Code; WHO = World Health Organization

